

WHAT IS CLAIMED IS:

1. A wireless communication apparatus having a transmission power control function used to control transmission power of the own communication station by employing a transmission power control bit sent from a communication counter station to the own communication station, comprising:

10 a control period changing unit which changes a control period of the transmission power control bit.

2. A wireless communication apparatus as claimed in claim 1 further comprising a transmission power control range changing unit which changes a transmission power control range corresponding to the transmission power control bit.

3. A wireless communication apparatus as claimed in claim 1 further comprising a condition detecting unit which detects a condition of the own communication station and a condition of the communication counter station,

wherein said control period changing unit changes the control period based upon the detected condition.

4. A wireless communication apparatus as claimed in claim 2 further comprising a condition detecting unit which

detects a condition of the own communication station and a condition of the communication counter station,

wherein said control period changing unit changes the control period based upon the detected condition,

5 wherein said transmission power control range changing unit changes the transmission power control range based upon the detected condition.

5. A wireless communication apparatus having a transmission power control function used to control said transmission power, comprising:

a first power amplifier and a second power amplifier which amplify transmission power transmitted from the own communication station to the communication counter station;

15 a power amplification control unit which controls a gain of said first power amplifier;

a matching unit which performs a matching operation of a characteristic of said second power amplifier; and

a matching control unit which controls said matching unit.

20 6. A wireless communication apparatus as claimed in claim 5 further comprising:

a transmission power detecting unit which detects transmission power of the own communication station;

25 a transmission power correcting unit which corrects the

detected transmission power in response to a communication condition of the own communication station; and

an error calculating unit which calculates an error between the corrected transmission power and target transmission power,

wherein both said power amplification control unit and said matching control unit execute the control operations thereof based upon the calculated error.

7. A wireless communication apparatus as claimed in claim 6 further comprising an error selecting unit which selects an error occurred in an effective control section from the plurality of errors which are calculated over a plurality of control sections,

wherein both said power amplification control unit and said matching control unit execute the control operations based upon the selected error.

8. A wireless communication apparatus as claimed in claim 7 further comprising an error averaging unit which averages the selected error,

wherein both said power amplification control unit and said matching control unit executes the control operations based upon the averaged error.

9. A wireless communication apparatus as claimed in claim 6 further comprising:

a correction amount calculating unit which calculates a correction amount based upon the error; and

5 a correction amount limiting unit which limits the calculated correction amount, wherein both said power amplification control unit and said matching control unit execute the control operations based upon the limiting correction amount.

10. A transmission power control method for controlling transmission power of the own communication station by employing a transmission power control bit which is sent from a counter communication station to the own communication station, comprising a step of:
15 changing a control period of said transmission power control bit.

11. A transmission power control method as claimed in claim 10 further comprising a step of changing a transmission power control range corresponding to said transmission power control bit.

12. A transmission power control method as claimed in claim 10 further comprising a step of detecting a condition of

the own station and a condition of the communication counter station,

wherein the control period is changed based upon said detected condition.

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13. A transmission power control method as claimed in claim 11 further comprising a step of detecting a condition of the own station and a condition of the communication counter station,

wherein the control period is changed based upon the detected condition,

wherein the transmission power control range is changed based upon said detected condition.

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14. A transmission power control method in which transmission power transmitted from the own communication station to a counter communication station is controlled by way of a first power amplifier and a second power amplifier, comprising steps of:

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controlling a gain of the first power amplifier;
matching a characteristic of the second power amplifier by way of a matching circuit; and
controlling the matching circuit.

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15. A transmission power control method as claimed in

claim 14 further comprising steps of:

detecting transmission power of the own communication station;

5 correcting the detected transmission power in response to a communication condition of the own communication station; and

calculating an error between said corrected transmission power and target transmission power,

wherein the first amplifier and the matching circuit are controlled based upon the calculated error.

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15 16. A transmission power control method as claimed in claim 15 further comprising a step of selecting an error occurred in an effective control section from the plurality of errors which are calculated over a plurality of control sections,

wherein the first amplifier and the matching circuit are controlled based upon the selected error.

20 17. A transmission power control method as claimed in claim 16 further comprising a step of averaging the selected error,

wherein the first amplifier and the matching circuit are controlled based upon said averaged error.

25 18. A transmission power control method as claimed in

claim 15 further comprising steps of:

calculating a correction amount based upon the error; and

limiting said calculated correction amount,

wherein the first amplifier and the matching circuit are

5 controlled based upon the limited correction amount.

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